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Packing all the free coil parameters into a one rank vector.

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## 0.1 Overview

- The **case\_coils** determines the packing and unpacking patern.
- **case\_coils** = 1: Coils are represented with Fourier series.
- For each coil, the number of DOF is  $6N_F + 4$  (sin 0 terms are omitted.)

$$\mathbf{X}_i = \left[ \overbrace{I, X_{c,0}, \dots, X_{c,N}, X_{s,1}, \dots, X_{s,N}}^{6N+4}, Y_{c,0}, \dots, Z_{s,N} \right] \quad (1)$$

$\underbrace{\hspace{10em}}_{N+1} \quad \underbrace{\hspace{10em}}_N$

- Coil currents/geometry can also be fixed, and they are determined by coil%Ic and coil%Lc.
- The total number of DOF  $Ndof$  should be

$$Ndof = Ncoils * (6 * NFcoil + 4) - Nfixcur - Nfixgeo * (6 * NFcoil + 3) \quad (2)$$

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packdof.h last modified on 019-03-31 16:39:25.;

[Focus subroutines;](#)

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